

CLAIMS

1. A process for preparing heterocyclic aldehyde, which comprises reacting a heterocyclic compound having at least one hydroxymethyl group bonded to a carbon atom of a heterocyclic ring with a hypohalogenous acid salt in the presence of a base to oxidize said hydroxymethyl group, wherein the reaction is conducted in the co-presence of a 2,2,6,6-tetramethylpiperidine-1-oxyl derivative having at least two 2,2,6,6-tetramethylpiperidine-1-oxyl-4-yl groups.

2. The process of Claim 1, wherein said heterocyclic compound having at least one hydroxymethyl group bonded to a carbon atom of a heterocyclic ring is a heterocyclic compound represented by formula (1):



(wherein Q represents a pyridine ring, a pyridazine ring, a pyrimidine ring, a pyrazine ring or a thiophene ring; CH₂OH and R¹ are substituents bonded to a carbon atom of a pyridine ring, a pyridazine ring, a pyrimidine ring, a pyrazine ring or a thiophene ring; R¹ represents an alkyl group, a cycloalkyl group, an aralkyl group, an aryl group, an alkoxy group, a nitro group, a hydroxy group or a halogen atom; j is an integer of 0 to 4 when Q is a pyridine ring, or an integer of 0 to 3 when Q is a pyridazine ring, a pyrimidine ring, a pyrazine ring or a thiophene ring) and

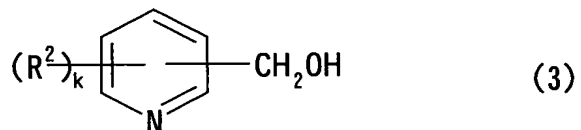
said heterocyclic aldehyde is a heterocyclic aldehyde represented by formula (2):



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(wherein Q, R¹ and j are the same as above).

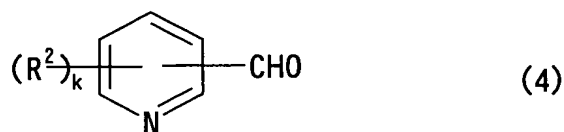
3. The process of Claim 1, wherein said heterocyclic compound having at least one hydroxymethyl group bonded to a carbon atom of a heterocyclic ring is a pyridinemethanol represented by formula (3):



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(wherein CH₂OH and R² are substituents bonded to a carbon atom of a pyridine ring; R² represents an alkyl group, a cycloalkyl group, an aralkyl group, an aryl group, an alkoxy group, a nitro group, a hydroxy group or a halogen atom; k is an integer of 0 to 4) and

20 said heterocyclic aldehyde is a pyridinecarbaldehyde represented by formula (4):

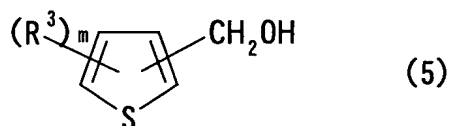


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(wherein R² and k are the same as above).

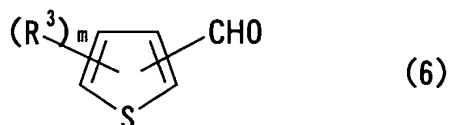
4. The process of Claim 3, wherein said heterocyclic compound having at least one hydroxymethyl group bonded to a carbon atom of a heterocyclic ring is a pyridinemethanol shown in formula (3), wherein R^2 is an alkyl group and k is an integer of 0 to 4, and said
5 heterocyclic aldehyde is a pyridinecarbaldehyde shown in formula (4), wherein R^2 is an alkyl group and k is an integer of 0 to 4.

5. The process of Claim 1, wherein said heterocyclic compound having at least one hydroxymethyl group bonded to a carbon atom of a heterocyclic ring is a thiophenemethanol represented by
10 formula (5):



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(wherein CH_2OH and R^3 are substituents bonded to a carbon atom of a thiophene ring; R^3 represents an alkyl group, a cycloalkyl group, an aralkyl group, an aryl group, an alkoxy group, a nitro group, a hydroxy group or a halogen atom; m is an integer of 0 to 3) and
20 said heterocyclic aldehyde is a thiophenecarbaldehyde represented by formula (6):



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(wherein R^3 and m are the same as above).

6. The process of Claim 5, wherein said heterocyclic compound having at least one hydroxymethyl group bonded to a carbon atom of a heterocyclic ring is a thiophenemethanol shown in formula (5), wherein R^3 is an alkyl group and m is an integer of 0 to 3, and said
5 heterocyclic aldehyde is a thiophenecarbaldehyde shown in formula (6), wherein R^3 is an alkyl group and m is an integer of 0 to 3.